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(54) Electric cables

(57) A cable comprises a central core and an outer cover member wherein the member has a triangular cross-section. In embodiments, at least one of the insulating covering or outer sheath is of triangular cross-section. Alternatively triangular cross-section tags may be attached to the cable (Fig 3). The cross-section may be chamfered or radiussed (Figs 1b, 4 & 5). The cable has advantages in conditions of poor visibility or restricted view.

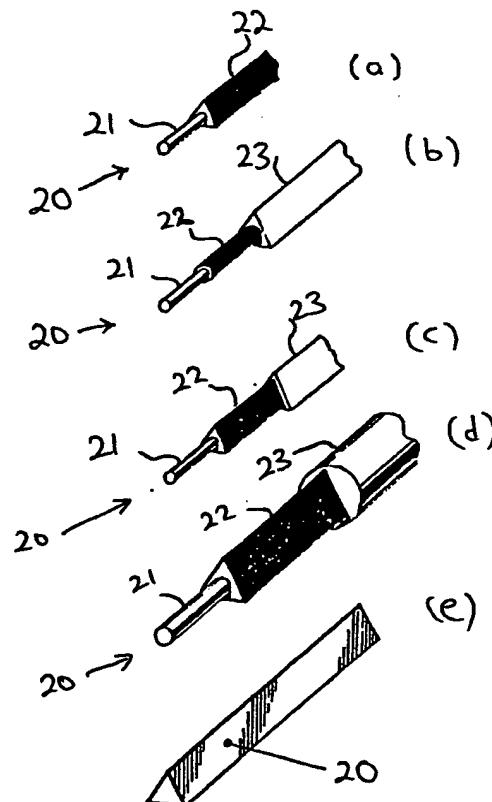


FIG. 2.

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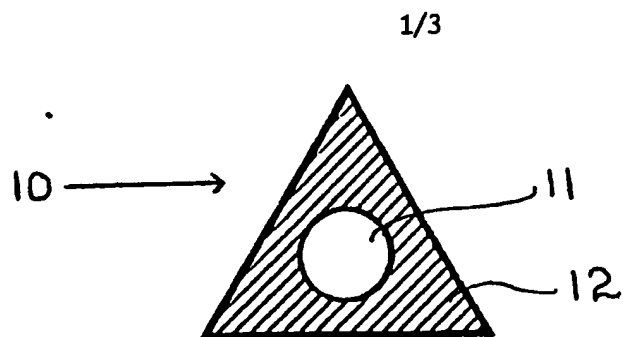


FIG. 1 (a)

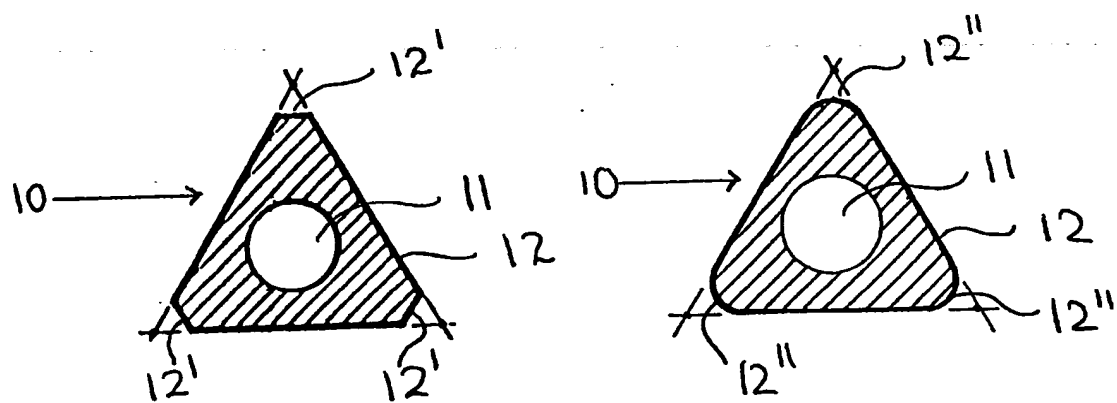


FIG. 1(b)

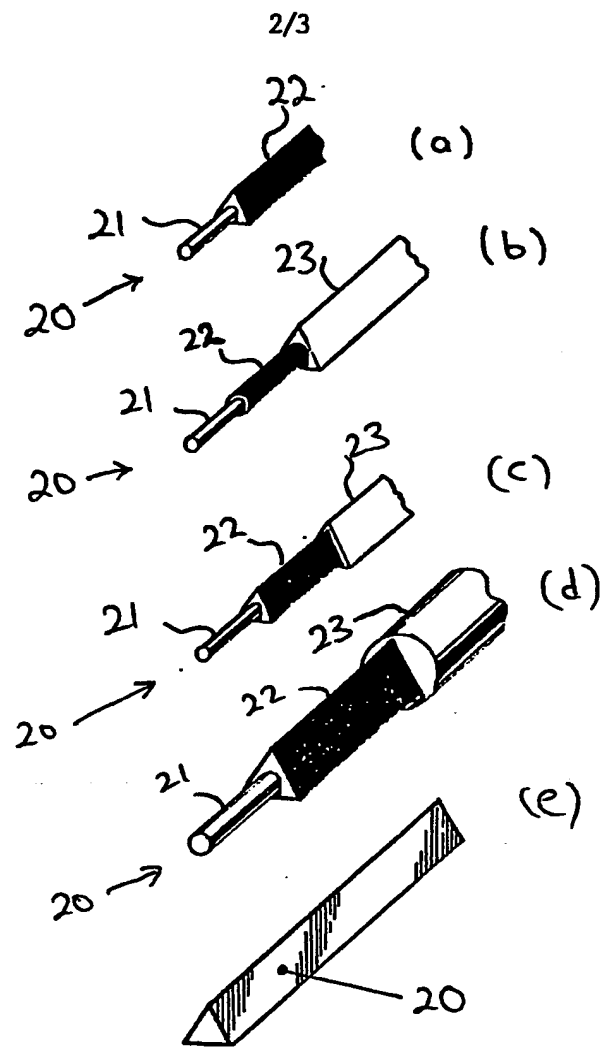


FIG. 2.

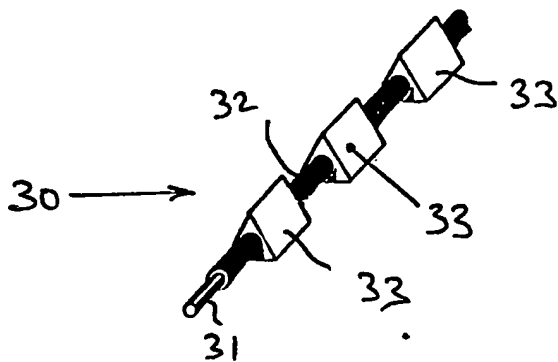


FIG. 3.

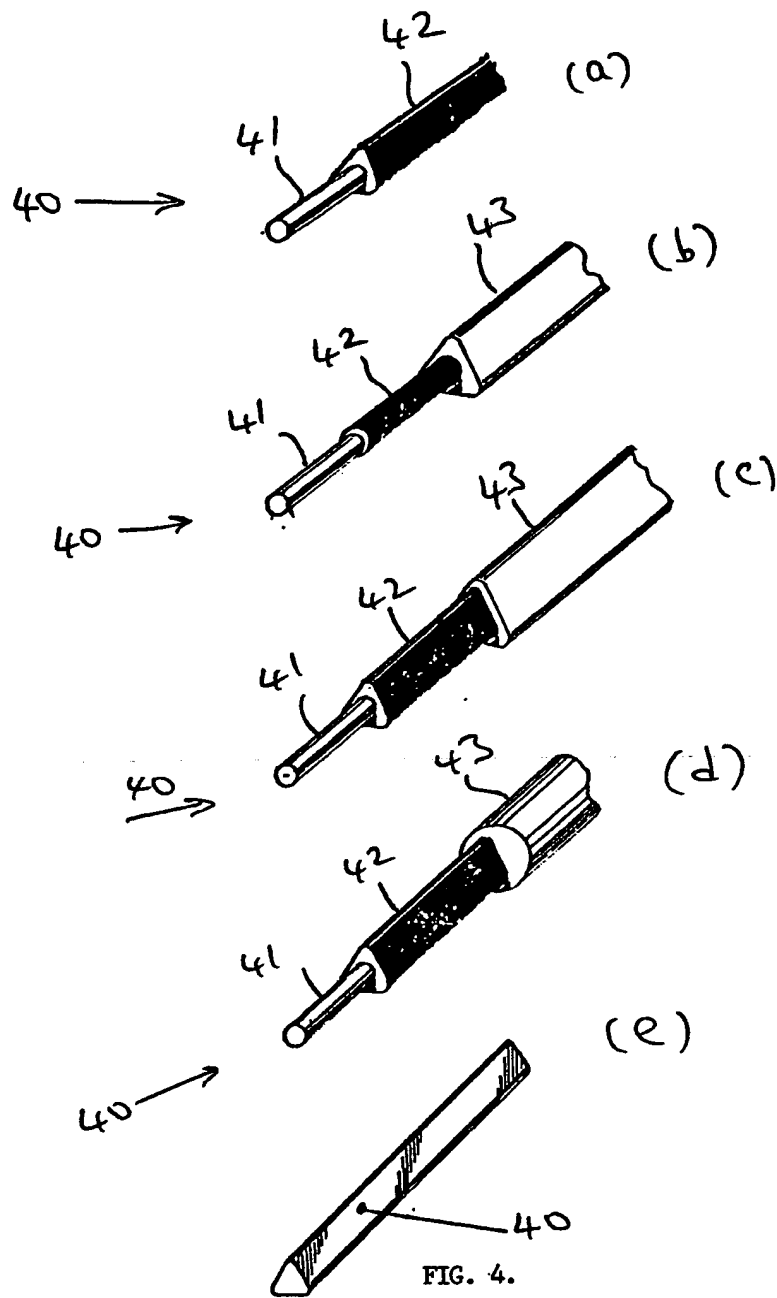


FIG. 4.

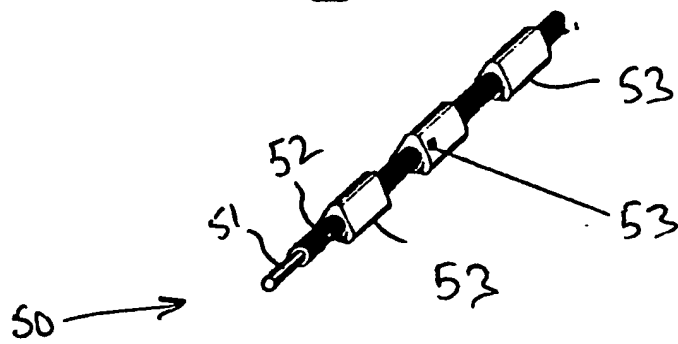


FIG. 5.

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IMPROVEMENTS IN OR RELATING TO CONDUCTOR CABLES

• The present invention concerns improvements in or relating to conductor cables. More particularly, the present invention relates to conductor cables which can easily be identified visually and/or by touch

• Heretofore, conductor cables have generally been of circular cross-section, regardless of the conducting purpose or function of the cable, viz. positive, negative or ground. In the majority of cases the conducting function of the cable is generally solely identifiable by the colour of the covering. In the case of a positive or live conductor cable, this has a critical importance in relation to health and safety.

It is an object of the present invention to provide a conductor cable which includes means which will make the identity of the conductor apparent to the user by adding visual and tactile means of identification.

According to the present invention there is provided a conductor cable, said cable comprising a central core member surrounding said central core member and an outer cover member, wherein said cover member, at least along a portion of the length thereof, is of triangular or substantially triangular cross-section.

The cover member may comprise an insulating member or a combination of an insulating member and an outer sheath member. When a combination of insulating member and outer sheath member constitute the cover member, then either the insulating member and/or the outer sheath member will be of triangular cross-section or substantially triangular cross-section.

The cover member may be formed having a triangular or substantially triangular cross-section continuously along its length; however, it is also possible for the cover member to have discrete lengths of triangular or substantially triangular cross-section separated by lengths having a circular cross-section.

The triangular or substantially triangular cross-section of the cover member may be modified by chamfering or radiusing the three apexes of the triangle to achieve greater durability and improve nesting and spooling properties. This modification does not in any way detract from the clear recognition of the basic triangular shape.

The change in the external profile of the conductor cable from the traditional circular profile to that of a triangle enables the cable to be identified in a quicker, easier and surer manner. The significantly different shape compared to that of existing cables will, it is believed, increase safety and efficiency in installation work by reducing the likelihood of any so called "mis-wiring" or any other installation error.

It is believed that adoption of the cable in accordance with the present invention to standard codes of practice will bring substantial benefits in any sphere of operation insofar as industry is concerned. In one embodiment, it should enable people with certain types of defective vision to safely work with electrical or electronic equipment.

The invention provides a conductor cable which can be clearly and easily identified and distinguished from other cables in good or adverse conditions by the provision of a triangular or substantially triangular

cross-section to the insulation and/or the sheathing which will be manufactured from approved materials. The present invention is not intended to affect the capacity or performance of the conductor, nor its chemical, electrical or electronic properties whether it be a single or multi-core cable or single or multi-stranded conductor.

It is believed that the present invention will have particular applicability with the use of positive (live) conductor cables. However, it is also believed that the provision of means of visual and tangible identification can be utilised to differentiate between conductor cables coming from different locations or having different functions regardless of their polarity.

For example, in electrical circuits in aircraft, all conductors connected to vital functions on say the starboard side would be of the characteristic triangular type whilst those from the portside would not. In another embodiment, in the case of a complex installation where certain circuits are critical to safety, for example, in emergency shut-down, then all the conductors used in such circuits would be of the characteristic triangular type, whilst other circuits would not.

In this alternative use of visible and tangible identification of conductors, the function is not to identify the conductor as to its polarity, but rather to identify a conductor as being part of a particular system or coming from a particular location.

It is also believed that the present invention can be applied to existing cables of circular cross-section. In this connection, a plurality of identifying members would be provided, each member being of triangular or substantially triangular cross-section and having a

central circular aperture therein. The size of such aperture would correspond to the size of the existing circular cable. In use, such identifying members would be provided at intervals along the length of the circular cable. Such plurality of identifying members would replicate the generally triangular shape of the cable in accordance with the present invention.

The present invention will be further illustrated, by way of example, with reference to the accompanying drawings, in which:

Fig. 1(a) is a cross-section through a conductor cable in accordance with the present invention of basic triangular shape;

Fig. 1(b) shows cross-sections through modified forms of conducting cable in accordance with the present invention having chamfered and radiused corners;

Figs. 2(a) - (e) are schematic views of various conductor cables in accordance with the present invention;

Fig. 3 is a schematic view of a conductor cable in accordance with the present invention utilising a plurality of identifying members of triangular cross-section;

Figs. 4(a) - (e) are schematic views corresponding to Figs. 2(a) - (e) having radiused corners; and

Fig. 5 is a schematic view of a conductor cable similar to that of Fig. 3, but wherein the identifying members have radiused corners.

As illustrated in Fig. 1, a conductor cable 10 in accordance with the present invention comprises a central core member 11 and a cover member 12 surrounding the core member 11, said cover member 12 being of triangular cross-section. The conductor cables illustrated in Fig. 1(b) are similar to the conductor



cable of Fig. 1(a), except that the corners of the cover member 12 are either chamfered 12' or radiused 12". The modified forms of Fig. 1(b), with the three apexes of the triangle chamfered or radiused, are sufficient to reduce the sharpness of the corners but not enough to detract from clear recognition of the basic triangular shape.

As illustrated in Figs. 2(a) - (e) various types of conductor cables in accordance with the present invention are shown. Each of the embodiments illustrated has a portion having a triangular cross-section. In Fig. 2(a), a conductor cable 20 is shown having a central core member 21 of triangular cross-section and an insulative cover member 22, said cover member 22 being of triangular cross-section. In Fig. 2(b), a cable 20 is illustrated having a central core member 21 of triangular cross-section, an insulative member 22 of circular cross-section and an outer sheath member 23, said member 23 being of triangular cross-section. In Fig. 2(c), the cable 20 has a central core member 21 of circular cross-section, an insulative member 22 of triangular cross-section and an outer sheath member 23, also of triangular cross-section. In Fig. 2(d) the cable 20 has a central core member 21 of triangular cross-section, an insulative member 22 of triangular cross-section and an outer sheath member 23, said member 23 being of circular cross-section. In Fig. 2(e) there is shown a solid bare conductor 20 of triangular cross-section.

In the embodiments disclosed in Figs. 2(a) - (e), the proportions and dimensions of the triangular profile will be determined by acceptable minimum thickness requirements in relation to insulation and sheathing materials.

Fig. 3 illustrates a conductor cable 30 according to the present invention, comprising a central core member 31 of circular cross-section, an insulative member 32, also of circular cross-section, and a plurality of identifying members 33, said members 33 being of triangular cross-section. Such identifying members 33 are of such construction as to enable same to be attached to the cable in such a way as to render them difficult to remove inadvertently. Positioning and spacing of the identifying members 33 along the cable 30 would be according to the users requirement. It can thus be seen that the use of identifying members 33 enable a conductor cable in accordance with the invention to be produced after manufacture of the basic cable having a central core member and an outer insulative member, both the core member and insulative member being of circular cross-section.

Figs. 4(a) - (e) are similar to the cable constructions illustrated in Figs. 2(a) - (e), with the exception that the corners of the portions of the cable of triangular cross-section are radiused. Thus, the description in relation to Figs. 2(a) - (e) also applies to Figs. 4(a) - (e) in relation to the conductor cable 40, formed from a central core member 41, an insulative member 42 and the outer sheathing member 43.

Fig. 5 is a similar arrangement to that illustrated in Fig. 3, with the exception that the identifying members have radiused corners. Thus, the description in relation to Fig. 3 also applies to Fig. 5 in relation to the conductor cable 50 formed from a central core member 51, an insulative member 52, both members 51 and 52 being of circular cross-section, and a plurality of identifying members 53.

It is believed that the conductor cable in accordance with the present invention will provide great advantages over currently existing cables whereby a particular type of cross-section of the conductor cable has been selected to enable such cable to be easily and clearly identified by visual and tactile means.

The materials from which the conductor cable in accordance with the present invention is constructed may be of any conventional type of material well known in the art in connection with the production of conductor cables.

CLAIMS

1. A conductor cable comprising a central core member and an outer cover member surrounding said central core member, wherein said cover member, at least along a portion of the length thereof, is of triangular or substantially triangular cross-section.
2. A conductor cable as claimed in claim 1, in which the cover member comprises an insulating member.
3. A conductor cable as claimed in claim 1, in which the cover member comprises a combination of an insulating member and an outer sheath member.
4. A conductor cable as claimed in claim 3, in which either the insulating member and/or the outer sheath member are of triangular cross-section or substantially triangular cross-section.
5. A conductor cable as claimed in any preceding claim, in which the cover member has a triangular or substantially triangular cross-section continuously along its length.
6. A conductor cable as claimed in any one of claims 1 to 4, in which the cover member is formed of discrete lengths of triangular or substantially triangular cross-section separated by lengths of circular cross-section.
7. A conductor cable as claimed in any preceding claim, in which the triangular or substantially triangular cross-section of the cover member is modified by chamfering or radiusing the three apexes of the triangle.

8. A conductor cable, substantially as hereinbefore described with reference to the accompanying drawings.